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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,995	02/20/2004	Robert S. Whitehouse	098104-0122	4368
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FOLEY & LARDNER LLP 111 HUNTINGTON AVENUE 26TH FLOOR BOSTON, MA 02199-7610			EXAMINER NERANGIS, VICKIE MARIE	
			ART UNIT 1796	PAPER NUMBER
			MAIL DATE 01/26/2010	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

## Application No.

10/783,995

## Applicant(s)

WHITEHOUSE, ROBERT S.

## Examiner

Vickey Nerangis

## Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 114-143 is/are pending in the application.
- 4a) Of the above claim(s) 123-127 and 137-141 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 114-122, 128-136 and 143 is/are rejected.
- 7) ☒ Claim(s) 142 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 11/19/09, 1/13/10
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

1. All outstanding rejections are withdrawn in light of applicant's amendment filed on 10/2/2009.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 10/2/2009. In particular, claim 114 has been amended to recite closed transitional language "consisting of" and claim 128 has been amended to recite that the first and second PHA are miscible or partially miscible. Thus, the following action is properly made final.

***Claim Rejections - 35 USC § 102***

4. Claims 114, 121, and 122 are rejected under 35 U.S.C. 102(b) as being anticipated by Waddington (US 6,111,006).

Waddington discloses a blends of two or more PHAs, wherein the PHA is represented by formula  $\text{—O—C}_m\text{H}_n\text{—CO—}$ . The blend comprises a polymer consisting of formula with 2-5 mol %  $m = 4$  (4-hydroxybutyrate) and rest  $m = 3$  (3-hydroxypropionate) and a polymer consisting of formula with 5-30 mol %  $m = 4$  (4-hydroxybutyrate) and the rest  $m = 3$  (3-hydroxypropionate). Given that the comonomer amounts are different, it is inherent that the glass transition temperature between the two is at least 1°C. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In light of the above, it is clear that Waddington anticipates the presently cited claims.

***Claim Rejections - 35 USC § 102***

5. Claims 119 and 120 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Waddington (US 6,111,006).

The discussion with respect to Waddington in paragraph 4 above is incorporated here by reference.

While Waddington does not disclose the properties of its blend composition such as deformation angle tolerate upon being molded, this property is considered to be inherent given that Waddington explicitly discloses a blend like claimed. Case law holds that a material and its properties are inseparable. *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990).

In light of the above, it is clear that Waddington anticipates the presently cited claims.

Alternatively, the presently claimed properties would have obviously been present given that Waddington discloses the polymer and blends as presently claimed.

***Claim Rejections - 35 USC § 103***

6. Claims 114-122, 128-136, and 143 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noda et al (US 6,808,795).

With respect to claims 114-122, Noda et al discloses a blend of polyhydroxyalkanoates (PHA) comprising a first PHA copolymer prepared from a comonomer represented by formula (I) that is 3-hydroxybutyrate (col. 4, lines 3-19) and a comonomer represented by formula (III) which reads on 4-hydroxybutyrate when m is 3 (col. 4, lines 32-38) and a second PHA that acts as a nucleating agent (col. 6, lines 1-5) that is prepared from a comonomer represented by

formula (V) that is 3-hydroxybutyrate (col. 5, lines 15-28) and a comonomer represented by formula (VII) which reads on 4-hydroxybutyrate (col. 5, lines 43-52). In the first copolymer, the ratio of 3-hydroxybutyrate to 4-hydroxybutyrate is 50:50-98:2 (col. 4, lines 56-61). In the second copolymer, the ratio of 3-hydroxybutyrate to 4-hydroxybutyrate the amount of 4-hydroxybutyrate is present in an amount of no more than 25 % of the total monomer units (col. 11, lines 62-65).

Noda et al fails to disclose with sufficient specificity so as to anticipate a blend two PHA copolymers having the same comonomers in different amounts.

Even so, given Noda et al's clear preference for 3-hydroxybutyrate as comonomer in both the first and second PHA copolymer and the teachings regarding second comonomer of 4-hydroxybutyrate, it would have been obvious to one of ordinary skill in the art to obtain a blend like claimed which would intrinsically have the presently claimed deformation angle tolerance upon being molded and differences in glass transition temperature.

With respect to claims 128-136 and 143, the rejection is adequately set forth in paragraph 9 of Office action mailed on 7/14/2009 and is incorporated here by reference.

7. Claims 128, 132-136, and 143 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horowitz (US 6,228,934).

Horowitz discloses a polymer particles comprising poly(3-hydroxybutyrate), poly(3-hydroxybutyrate-co-4-hydroxybutyrate), other PHAs, and blends thereof (col. 12, lines 7-16). While Horowitz does not exemplify a composition containing a blend of poly(3-hydroxybutyrate) and poly(3-hydroxybutyrate-co-4-hydroxybutyrate), such is clearly suggested

given that Horowitz teaches blends. Therefore, it would have been obvious to one of ordinary skill in the art to utilize a blend of poly(3-hydroxybutyrate) and poly(3-hydroxybutyrate-co-4-hydroxybutyrate) from the disclosure of Horowitz and thereby obtain a composition with the presently claimed deformation angle and thermal deformation resistance as claimed.

With respect to claim 132, given that Horowitz discloses a blend it would have been obvious to one of ordinary skill in the art to prepare a 1:1 mixture because when faced with a mixture, one of ordinary skill in the art would be motivated by common sense to select a 1:1 ratio, a ratio that falls within the presently claimed amount, absent evidence of unexpected or surprising results. Case law holds that "[h]aving established that this knowledge was in the art, the examiner could then properly rely... on a conclusion of obviousness, 'from common knowledge and common sense of the person of ordinary skill in the art within any specific hint or suggestion in a particular reference.'" *In re Bozek*, 416 F.2d 1385, 1390, 163 USPQ 545, 549 (CCPA 1969).

With respect to claim 143, the blend of Horowitz would be at least partially miscible because of the shared monomer 3-hydroxybutyrate in each polymer.

***Allowable Subject Matter***

8. Claim 142 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

9. Applicant's arguments filed 10/2/2009 have been fully considered but they are not persuasive. Specifically, applicant argues that Noda does not teach partially miscible blends because the second PHA copolymer is dispersed in the first PHA copolymer.

It is noted that the examiner stated in an interview held on 10/2/2009 that an amendment to claim 128 with "at least partially miscible" language would overcome the prior art rejection over Noda. However, upon reconsideration, the examiner has determined that the second PHA of Noda is at least partially miscible in the first PHA because of the shared comonomer 3-hydroxybutyrate. While Noda teaches that the second PHA is dispersed in the second PHA, this does not exclude the blend from being partially miscible, as partially miscible blends can include dispersions. The examiner's position is supported by the fact that the degree of miscibility of the limitation "partially miscible" is not defined by applicant. Therefore, a the most minor amount of miscibility would still read on the claim limitation "partially miscible."

***Conclusion***

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Nerangis whose telephone number is (571) 272-2701. The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vn

/Vickey Nerangis/  
Primary Examiner, Art Unit 1796